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30W/2172

Ukrainskiya nauk ESU. Mezhdunarodnaya postoyannaya komissiya po shkolam

Zelaznordunye mestorozhdeniya Altaye-Sayvunkey gornoy oblasti, tom. 1, kniga. 1: Geologiya (Irina Ore Deposits of the Altay-Sayan Mountain Region, Vol. 1, Book 1) Geology, Moscow, 1968. 330 p. (Series: *Zhelaznordunye mestorozhdeniya SSSR*) Errata slip inserted. 2,500 copies printed.

Additional Sponsoring Agencies: Akademiyu nauk SSSR, Sibirskoye otdeleniye, USSR. Gosstatizmysya planovaya komissiya. Glavnyy upravleniye nachukho-issledovatel'skikh i proyektnykh organizatsiy. Ministerstvo geologii, SSSR. Ministerstvo geologii i obratnyy nek. USSR. Zapskno-Sibirskoye geologicheskoye upravleniye, SSSR. Transsibirskoye geologicheskoye upravleniye, Sibirskiy geofizicheskiy tsentr. Tsentralnyy nachukho-issledovatel'skiy geologicheskii institut.

66. of the vol.: P. Fe. Gladkov, and G.A. Sokolov. Rep. Ed. of Series: I.P. Berlin, Academics; Scientific Eds.: I.P. Berlin, Academics; I.P. Gorbachev, A.I. Pavlov, M.A. Yevdokimov, A.S. Kabanov, G.I. Strunov, G.I. Puzalov, M.L. Sokolov, P. Fe. Gladkov, S.S. Kuznetsov (Deceased), G.A. Sokolov, G.A. Strunov, Academics; V.B. Kabanov, A.A. Chukhalov, and I.S. Shapovalov. Ed. of Publishing House: I.G. Kabanov; Tech. Ed.: I.P. Pavlov.

REMARKS: This book is intended for structural, exploration and mining geologists, for geophysicists and mineralogists, and industrial planners.

[illegible]

6/5 1994

9

BYKOV, G. O

USSR/General Problems.

A-

Abs Jour : Referat Zhur - Khimiya, No 10, 1957, 33389

Author : Bykov, G.P.

Inst :

Title : An Outline of the Life and Work of Alexander Nikiforovich Popov.

Orig Pub : Tr. in-ta istoriyi yestestvozn. i tekhn. AN SSSR, 1956, 12, 200-245.

Abstract : A.N. Popov (1840-1881), organic chemist, prof. of the University of Warsaw (from the year 1869). The material from the archive is utilized. Bibliography with 109 references. A bibliography of scientific publications by A.N. Popov is given. See also RZhKhim, 1955, 36546.

Card 1/1

L 40381-66 ENT(1)/ENT(m)/EMP(t)/ETI IJP(c) JD/WT/JG

ACC NR: AP6024544

SOURCE CODE: UR/0089/66/021/001/0058/0059

AUTHOR: Borishanskiy, V. M.; Andreyevskiy, A. A.; Zhokhov, K. A.;
Bykov, G. S.; Svetlova, L. S. 73
72
B

ORG: none

TITLE: Heat transfer during the boiling of potassium in a tube in the
region of moderate vapor content 21

SOURCE: Atomnaya energiya, v. 21, no. 1, 1966, 58-59

TOPIC TAGS: potassium, boiling, heat transfer, liquid metal, two
~~phase flow~~ *dimensional flow*

ABSTRACT: The results of an investigation of heat transfer during the boiling of potassium in round tubes 10 mm in diameter and 600 and 800 mm long are described. The tube wall temperature was measured at 10 positions along the test section. The potassium temperature was measured at the inlet into the test section, at distances of 30, 90, and 210 mm from the inlet, and 30 mm from the exit. The experiment was conducted in the range of saturation pressure $p_s = 0.42-3.38$ atma ($t_s = 678-910^\circ\text{C}$) at heat loads of up to $53,000 \text{ kcal/m}^2\cdot\text{hr}$. The vapor content at the inlet reached $\sim 15\%$ by weight. The investigation shows that the temperature head and the heat transfer coefficient along the length of the test section are almost constant. It was noted during

Card 1/2

UDC: 621.039.517.5

L 40381-66

ACC NR: AP6024544

the experiment that when subcooled liquid metal was fed into the test section, superheating (30—50C) of the potassium takes place. Then, the temperature dropped sharply to about the saturation temperature. This process was accompanied by significant fluctuations in the wall and vapor-liquid media temperatures along the whole length of the test section. The maximum amplitude of temperature fluctuation reached *20C. The following formula previously obtained for pool boiling can be used to calculate heat transfer for potassium boiling in a tube:

$$\alpha = 3q^{0.7}p^{0.15},$$

where α is the heat transfer coefficient in $\text{kcal/m}^2\cdot\text{hr}\cdot^\circ\text{C}$; q , heat load in $\text{kcal/m}^2\cdot\text{hr}$; and p is pressure in atma. Orig. art. has: 4 figures and 1 formula. [AV]

SUB CODE: ~~11-30~~ SUBM DATE: 018Feb66/ ORIG REF: 004/ OTH REF: 003/
ATD PRESS: 5053

Card 2/2 MLP

GUBIN, Georgiy Viktorovich; KUCHER, Aleksandr Mikhaylovich; BYKOV, ~~Germadiy Vasil'yevich~~; IZMALKOV, Aleksandr Zakharovich;
YARKHO, Ye.N., otv. red.; KACHALKINA, Z.I., red. izd-va;
SAETTOV, A., tekhn. red.

[Roaster of ores] Obzhigal'shchik rud. Moskva, Gosgortekh-
izdat, 1962. 68 p. (MIRA 15:10)
(Ore dressing)

BYKOV, G.V., kand.khimicheskikh nauk; PLATE, A.F., doktor khimicheskikh nauk

Boris Aleksandrovich Kazanskii; on the seventieth anniversary of his
birth. Zhur.VKHO 6 no.4:447-448 '61. (MIRA 14:7)
(Kazanskii, Boris Aleksandrovich, 1891.)

PLATE, Al'fred Feliksovich; BYKOV, Georgiy Vladimirovich; EVENTOVA,
Mariya Solomonovna; DANILOV, S.N., otv. red.; VOLODINA,
Ye.I., red. izd-va; GOLUB', S.P., tekhn. red.

[Vladimir Vasil'evich Markovnikov; story of his life and sci-
entific activity, 1837-1904] Vladimir Vasil'evich Markovnikov;
oчерk zhizni i deiatel'nosti, 1837-1904. Moskva, Izd-vo
Akad. nauk SSSR, 1962. 149 p. (MIRA 15:3)
(Markovnikov, Vladimir Vasil'evich, 1837-1904)

BYKOV, O.D.

Apparatus containing rubber chambers for experiments on photosynthesis
in a stream of radioactive carbon dioxide. Fiziol. rast. 6 no.5:627-629
S-0 '59. (MIRA 13:2)

1. Department of Plant Physiology, Leningrad State University.
(Botanical apparatus) (Photosynthesis)

BYKOV, G. V.

"Origin and Development of the Classical Theory of the Structure of Organic Compounds." Sub 16 Feb 51, Moscow Order of Lenin State University M. V. Lomonosov.

Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55

CA 3

Distribution of π -electron density and interatomic distances. G. V. Bykov. *Izv. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1951, 823-8. — The shortening of single-bond links in unsatd. compds. is explained on the basis of direct proportionality of shortening of any bond to the magnitude of π -electronic charge present. With standard C—C link taken from the diamond lattice, numerous examples are taken in support of the hypothesis. The specific shortening of the C—C link is 0.140 Å., that of C—H link is 0.042 Å., which represents the shortening caused by one π -electron.
G. M. Kosolapoff

USSR/Chemistry -- Theory of
Structure

Jul/Aug 51

"Review of A. M. Butlerov's 'Selected Works in Organic Chemistry,' Edited and Annotated by Academician B. A. Kazanskiy, Corresponding Member, Academy of Sciences USSR, A. D. Petrov, and G. V. Bykov [1951 1]." V. M. Rodionov

"Uspekhi Khim" Vol XX, No. 4, pp 516-519

Outlines Butlerov's work in detail. Deplores Kekule's plagiarism, the lack of recognition by Western European scientists, and the fact that Butlerov's pioneering work remained forgotten by Russian chemists until the early 1940's.

1917\$

BYKOV, G. V.

191T13

USSR/Chemistry - Structural Theory Sep/Oct 51
History of Chemistry

"To the 50th Anniversary of A. M. Butlerov's
1828-1886 Theory of Chemical Structure," G. V.
Bykov, Moscow

"Uspekhi Khim" Vol XX, No 5, pp 657-667

Describes Butlerov's work and present-day views
on subject of structural theory held in the USSR.
Mentions controversy on the priority of discov-
eries which occurred between A. Kekule and
Butlerov and the lack of recognition which
Butlerov received in Western Europe. Cites

191T13

USSR/Chemistry - Structural Theory Sep/Oct 51
(Contd)

F. F. Belstein's apologies to Butlerov on the
subject and V. V. Markovnikov's statement to the
effect that Russian scientists cannot expect an
unprejudiced evaluation of their work on the
part of Westerners, especially when a compatriot
of the Western scientist in question is involved.

191T13

DIKOV, G.V.

The distribution of pi-electron density and interatomic distances. II.
Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk '52, p. 367-74.
(CA 47 no.13:6252 '53)
(MLRA 5:5)

BYKOV, G. V.

"Theory of A. M. Butlerov and Mesomerism (based on a report in 'Nature'),"
Priroda, 41, No.7, 1952

BYKOV, G.V., kandidat khimicheskikh nauk.

Basic concepts of A.M. Butlerov's theory of chemical structure. Khim. v shkole
no. 4:8-19 J1-Ag '53. (MLFA 6:8)
(Molecular theory)

BYKOV, G. V.

Chem Abs 48
1-25-54
general & Physical
Chemistry

Two statements by D. I. Mendeleev about A. M. Butlerov.
✓ G. V. Bykov. *Uspekhi Khim.* 22, 115-18(1953).—Histori-
cal. ~~Texts of Mendeleev's~~ statements are reproduced and
discussed. G. M. Kosolapoff

Chemical Abst.
Vol. 48 No. 3
Feb. 10, 1954
Organic Chemistry

The state of the theory of chemical structure in organic chemistry. B. A. Kazanski and G. V. Brikov, *Zhur. Obshchei Khim.* 23, 163-164 (1954).--A discussion of the Butlerov theories of structure and criticism of G. V. Chelintsev's theory of "contact bonds." Cf. C.A. 47, 1573d.
G. M. Kosolapov

The state of the theory of chemical structure in organic
chemistry. By A. I. Iuzanski and G. V. Bykov. J. Gen.
Chem. U.S.S.R. 23, 171-9 (1953) (Engl. translation).—See
C.A. 48, 1233c. H. L. H.

BYKOV, G.V.

A.M. Butlerov, founder of the theory of reversible isomerization (tautomerism).
Priroda 42 no. 9:59-63 S '53. (MLB 6:8)
(Butlerov, Aleksandr Mikhailovich, 1828-1886) (Tautomerism)

BYKOV, G. V.
USSR/Chemistry

FD-1239

Card 1/1 : Pub. 129-1/25

Author : Bykov, G. V.

Title : The development of the theory of chemical structure in the works of V. V. Markovnikov

Periodical : Vest. Mosk. un., Ser. fizikomat. 1 yest. nauk, 9, No 1, 3-16, Feb 1954

Abstract : Discusses Markovnikov's theory of chemical structure and some of the results of its investigation, among such topics as isomerization, interatomic influence, structure of unsaturated compounds, structure of aliphatic and aromatic compounds and stereochemistry. Twenty-eight references.

Institution : Chair of Historical Chemistry

Submitted : June 8, 1953

Development of chemical structure theory in the works
of V. V. Markovnikov. G. V. Bekasov. *Vestnik Mosk. univ.* 9, No. 2, Ser. *Estestvozn.* 1950, No. 1, p. 36 (1950).--Historical with 28 references. G. M. K.

BYKOV, G.V.

Some forgotten editions of A.M. Butlerov's lectures on chemistry; sources for the study of the history of chemistry in Russia. Trudy Inst. ist. est. i tekhn. no. 2: 67-90 '54.

(MLA 8:9)

(Chemistry, Organic--History)

MARKOVNIKOV, V.V.; PLATE, A.F., doktor khimicheskikh nauk, redaktor;
BYKOV, G.V., kandidat khimicheskikh nauk, redaktor; PETROVSKIY,
 I.B., akademik, redaktor; BYKOV, K.M., akademik, redaktor; KAZAN-
 SKIY, B.A., akademik, redaktor; SHMIDT, O.Yu., akademik, redaktor;
 ANDREYEV, N.N., akademik, redaktor; SHCHERBAKOV, D.I., akademik,
 redaktor; YUDIN, P.F., akademik, redaktor; DELONE, B.N., redaktor
 KOSHTOYANTS, Kh. S., redaktor; SAMARIN, A.M., redaktor, LEBEDEV,
 D.M., professor, redaktor; FIGUROVSKIY, N.A., professor, redaktor;
 KUZNETSOV, I.V., kandidat filologicheskikh nauk, redaktor; STERLI-
 GOV, O.D., redaktor; ZEMLYAKOVA, T.A., tekhnicheskii redaktor

[Selected works] Izbrannye trudy. Redaktsiya, stat'i i primechania
 A.F. Plate i G.V. Bykova, Moskva, Izd-vo Akademii nauk SSSR 1955.
 926 p.

(MLRA 8:10)

1. Chlen-korrespondent AN SSSR (for Delone, Koshtoyants, Samarin)
 (Chemistry) (Markovnikov, Vladimir Vasil'evich 1837-1904)

BYKOV, G. V.

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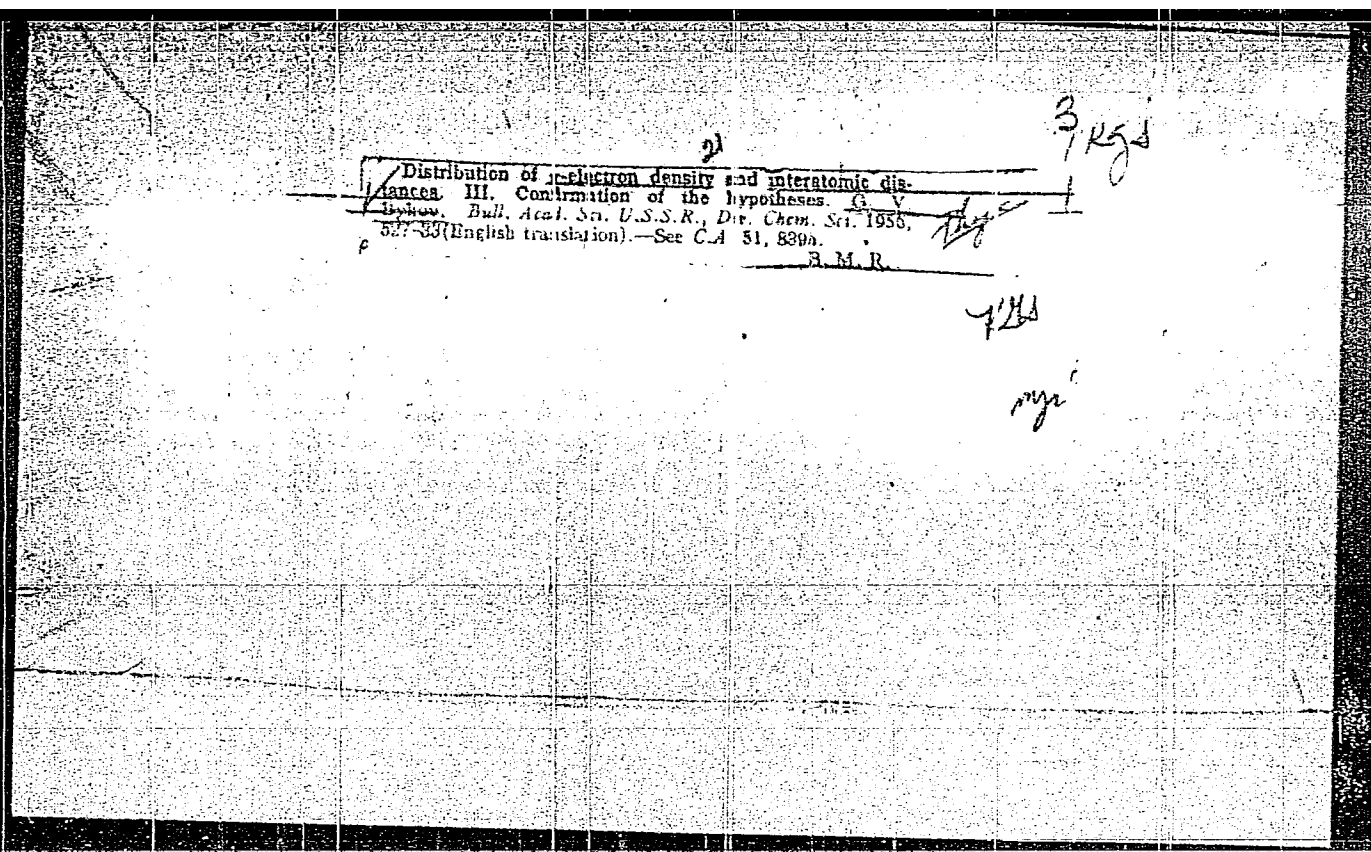
Khimiya V Moskovskom Universitete Za 200 Let (1755-1955) (Chemistry
in Moscow University for 200 years (1755-1955) by) N. A. Figurovskiy,
G. V. Bykov (1) T. A. Komarova.
(Kratkiy Istoricheskiy Ocherk) Moscow, Izd-Vo Moskovskogo Universi-
teta, 1955.
141 P. Illus., Ports.
At Head of Title: Moscow. Universitet.
Bibliographical Footnotes.

BYKOV, G.V.

Material on the history of the first three editions of A.M. Butlerov's "Introduction to a comprehensive study of organic chemistry." Trudy Inst.ist.est.i tekhn. vol.6:243-291 '55.

(MLRA 9:5)

(Butlerov, Aleksandr Mikhailovich, 1828-1886)(Chemistry, Organic)



Bykov, G.V.

USSR/Physical Chemistry - Molecule, Chemical Bond.

B-4

Abs Jour : Referat Zhur - Khimiya, No 1, 1958, 69

Author : G.V. Bykov.

Inst : Academy of Sciences of USSR

Title : Distribution of π -Electron Density and Interatomic Distances. Report 3. Confirmation of Hypotheses.

Orig Pub : Izv. AN SSSR, Otd. khim. n., 1956, No 5, 531-537

Abstract : Earlier the author advanced the following 2 theses:
1) the covalent bonds in molecules are produced by σ - and π -electron charges, which generally are not equal to the total number of electrons; 2) all bonds joining atoms-donors of π -electrons possess π -electron charges (Foregoing reports, Izv. AN SSSR. Otd. khim. n., 1951, 823; 1952, 367). An equation expressing the linear dependence between the π -electron charge of the

Card 1/2

USSR/Physica Chemistry - Molecule, Chemical Bond.

B-4

Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 69

link and its length was also proposed. The author considers the new bibliographical data from the point of view of expressed assumptions, which, in his opinion, confirm them. In particular, proofs of the spread of π -electron charges over C - H bonds are brought forward.

Card 2/2

BYKOV, G.V.

A.M. Butlerov and English chemists. Vop. 1st. est. 1 tekhn. no.
1:286-289 '56. (MLRA 9:10)

(Butlerov, Aleksandr Mikhailovich, 1828-1905)

BYKOV, G.V.

Concerning V.IA. Kurbatov's review article "for teaching history of chemistry as a science". Vest.Mosk.un. 11 no.3:137-139 Mr '56.

(Chemistry--History--Study and teaching) (MLBA 9:8)
(Kurbatov, V.IA.)

[illegible]

Michael Dyrnsky

4

A semiquantitative theory for the mutual influence of
atoms in organic compounds II. Electron charge of
bonds and the physical properties of molecules
Rosen, J. Am. Chem. Soc. 77: 5700-5704 (1955)
1955 1450-44 of 1955 1450-44

PM
any
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BYKOV, G.V.

Life and work of Aleksandr Nikiforovich Popov. Trudy Inst.1st.est.
1 tekhn. 12:200-245 '56. (MLRA 9:12)
(Popov, Aleksandr Nikiforovich, 1840-1881)

Testing of the serial quantitative

Effect of atoms in the

of the serial quantitative

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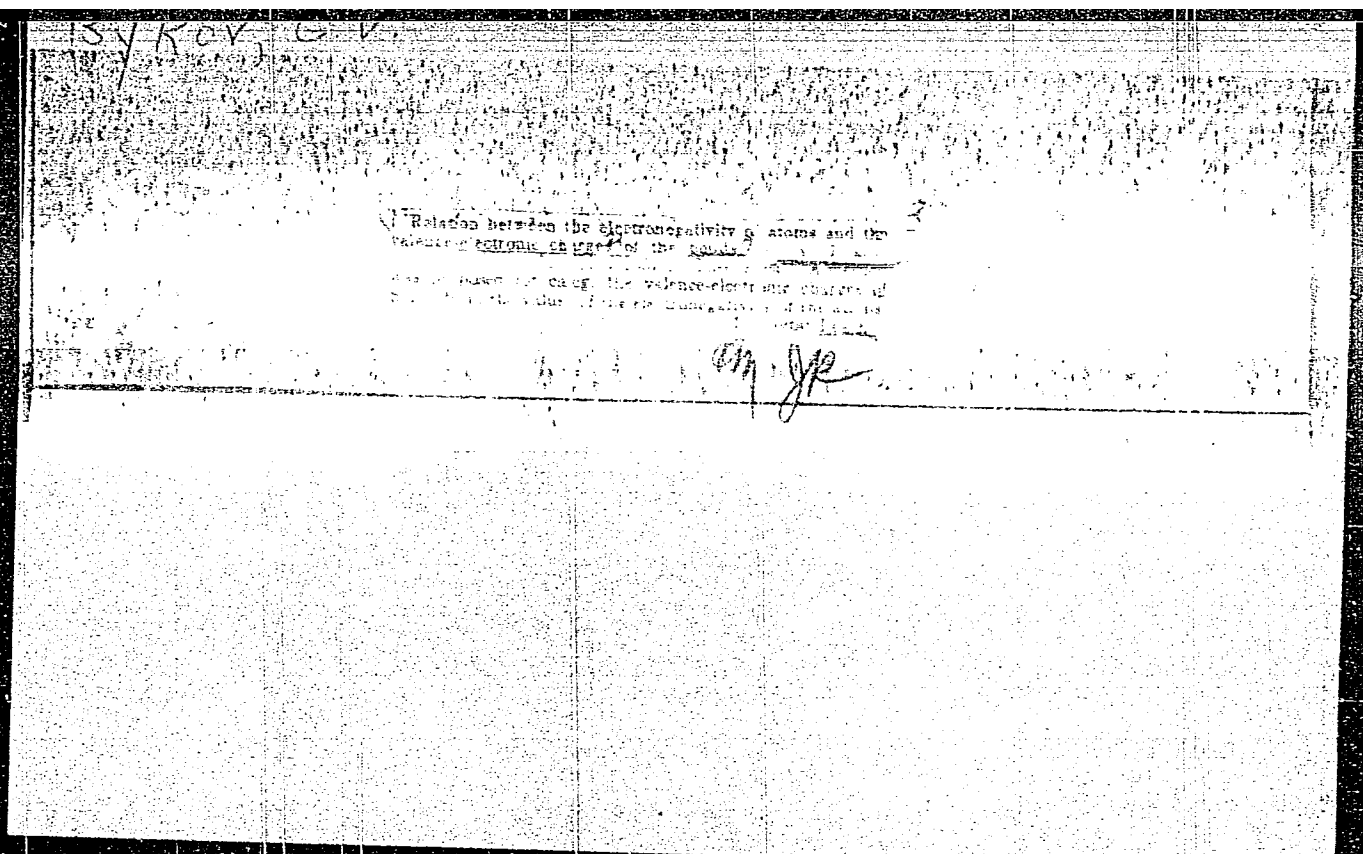
BYKOV, G.V.

Electron bond charges in ethylene, allene and benzene. Izv. AN
SSSR. Otd.khim.nauk no.2:235 F '57. (MLRA 10:4)

1. Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR.
(Chemical bonds)

BYKOV, G.V., kandidat khimicheskikh nauk.

"Molecules and their structure" by M.V. Vol'kenshtein. Reviewed
by G.V. Bykov. Khim. v shkole 12 no.3:75-76 '57. (MIRA 10:6)
(Stereochemistry) (Vol'kenshtein, M.V.)



phys The heat of atomization of carbon. G. V. Bykov. Zhur.
Akad. Nauk S.S.S.R., Otdel. Khim. Nauk 1956, 1416-18.
The heat of atomization of C into its atoms retaining its
valence state was calcd. to be approx. 32 kcal./g. atom.
J. Rovtar Leach

BYKOV, G.V.

Semiquantitative theory of the interaction of atoms in organic compounds.
Report no.2: Electron charges of bonds and the physical properties of
molecules. Izv. AN SSSR Otd. khim. nauk no.12:1435-1444 D '56.

(MIRA 10:4)

1. Institut istorii yestestvoznaniya i tekhniki Akademii nauk SSSR.
(Chemical bonds)

chem V 12903 (Russian) Semiquantitative Theory of Mutual Influences of Atoms in Organic Compounds. Opyt polukolichestvennoi teorii vzaimnogo vlianiia atomov v organicheskikh soedineniakh. III. Electronic Bond Charges and Chemical Properties of Molecules. Mechanism of Mutual Influences of Atoms. Elektronnnye zaryady svyazi i khimicheskie svoistva molekul. Mekhanizm vzaimnogo vlianiia atomov. C. V. Butay. Izvestiya Akademii Nauk SSSR, Otdelenie Khimicheskikh Nauk, no. 5, May 1957, p. 554-562.

2

em up

BYKOV, G.V.

BYKOV, G.V.

What was the conception of "chemical structure" held by Russian chemists before A.M. Butlerov? Vop. ist. est. i tekhn. no. 4:179-181 '57.

(MIRA 11:1)

(Chemistry—History)

Bykov G.V.

BYKOV, G.V.; KURINNOY, V.I.

History of the first chemical equations. Vop.ist.est. i tekhn.
no.5:172-174 '57.

(Chemistry, Analytical)

(MIRA 11:2)

BYKOV, G.V.

Two calculations of σ -electronic bond charges of propane.
Zhur.fiz.khim.31 no.7:1654-1655 J1 '57. (MIRA 10:12)

1. AN SSSR, Institut istorii yestestvoznaniya i tekhniki.
(Chemical bonds) (Propane)

BYKOV, G.V.

Electronic charges of bonds and chemical properties of molecules.
Part 1: Activation energy of substitution reactions at the saturated
carbon atom. Zhur. ob. khim. 28 no.3:584-588 Mr '58. (MIRA 11:5)
(Activity coefficients)

BYKOV, G.V.

AUTHOR: Bykov, G.V., Candidate of Chemical Sciences 25-58-3-35/41
TITLE: The Works of A.M. Butlerov (Trudy A.M. Butlerova)
PERIODICAL: Nauka i Zhizn', 1958, Nr 3, p 75 (USSR)
ABSTRACT: This is a short critique on the works of the Soviet scientist A.M. Butlerov, who established the theory of chemical structures which formed the basis for the modern electronic theory of the structure of organic compounds. The scientific achievements of Butlerov as laid down in his works are described. There is one photograph.
AVAILABLE: Library of Congress
Card 1/1 1. Organic compounds-Theory

AUTHOR: Bykov, G. V.

62-58-6-20/37

TITLE: The Frequencies of the Valence-Oscillations and the Electron Charges of C - H Bonds in Hydrocarbons (Chastoty valentnykh kolebaniy i elektronnyye zaryady svyazey C - H v uglevodorodakh)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye khimicheskikh nauk, 1958, Nr 6, pp. 771 - 772 (USSR)

ABSTRACT: In continuation of earlier papers (Refs 1,2) concerning calculations of the values of full σ - π electron charges of C - H bonds in allene, ethylene, benzene, etc., the authors of this report prove the existence of a linear dependence between the frequencies of valence-oscillations and electron charges of the bonds C - H in the most simple hydrocarbons of various classes (two examples are given). The three different methods of calculating the electron charges of the bonds in acetylene, which are mentioned by the authors, lead to nearly the same (or at least very similar) results. The authors assume that the diagrams electron charge - frequency might be useful in the analysis of molecular spectra. There are 1 figure, 1 table, and 4 references, 2 of which are Soviet).

Card 1/2

The Frequencies of the Valence-Oscillations and the
Electron Charges of C - H Bonds in Hydrocarbons SOV/ 62-58-6-20/37

ASSOCIATION: Institut istorii yestestvoznaniya i tekhniki Akademii nauk SSSR
(Institute of the History of Natural Sciences and Technology,
AS USSR)

SUBMITTED: January 31, 1957

- | | |
|---------------------------------------|-----------------------------|
| 1. Hydrocarbons--Molecular structure | 2. Hydrocarbons--Properties |
| 3. Hydrocarbons--Electron transitions | 4. Molecular spectroscopy |

Card 2/2

AUTHOR: Bykov, G. V.

SOV/62-58-6-21/37

TITLE: ~~The Electron~~ Charges of Bonds in Acetylene (Elektronnyye zaryady svyazey v atsetilene)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye khimicheskikh nauk, 1958, Nr 6, pp. 773-774 (USSR)

ABSTRACT: In accordance with the theory of bonds the general electron cloud (σ - and π - electron cloud) may be considered to be the sum of the charges localized in these bonds. By means of this theory, as developed by the author, it is possible to predict the existence of π -electron charges of C-H (and similar) bonds which have been formed with only one donor atom of π -electrons. The calculation of electron charges in acetylene carried out in this paper in accordance with thermochemical data makes it possible to compare the results obtained by this calculation with those obtained by calculating frequencies and interatomic distances. Calculation of electron charges of bonds in acetylene is described by the author on the basis of 8 formulae; there is sufficient agreement with the results obtained by means of 2 other calculations. New confirmation is

Card 1/2

The Electron Charges of Bonds in Acetylene

SOV/62-58-6-21/37

provided of the localization of the π -electron cloud in 0,7-0,8 electron in the C-H bond in acetylene. Calculation results are shown by a table. There are 2 tables and 4 references, 3 of which are Soviet.

ASSOCIATION: Institut istorii yestestvoznaniya i tekhniki Akademii nauk SSSR (Institute of the History of Natural Sciences and Technical Engineering, AS USSR)

SUBMITTED: June 14, 1957

1. Acetylene--Molecular structure
2. Acetylene---Properties
3. Acetylene---Electron transistions

Card 2/2

AUTHOR: Bykov, G. V.

SOV/62-58-7-4/26

TITLE: On the Distribution of π -Electron Density and Interatomic Distances (O raspredelenii π -elektronnoy plotnosti i mezhatomnykh rasstoyaniyakh) Communication 4: Semiempirical Equations (Soobshcheniye 4. Raschetnyye poluempiricheskiye uravneniya)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye khimicheskikh nauk, 1958, Nr 7, pp 822 - 826 (USSR)

ABSTRACT: Since the first calculation of the π -electron charges of the bindings (elektronnykh zaryadov svyazey) have been carried out by the authors new possibilities for this calculation were published. This makes possible a comparison of the results obtained this way. In the present paper the authors calculated the constants of the semiempirical equations expressing the dependence of the interatomic distances of the π -electron charges of the bindings (in organic compounds). By means of the example of the C-C bindings the relative small influence exerted by the changes in the σ -electron charge on the interatomic distances was proved. It was furthermore found that the nitrogen atom may also occur as a donor of 3 π -electrons. There are 2

Card 1/2

On the Distribution of π -Electron Density and Inter-atomic Distances. Communication 4: Semiempirical Equations SOV/62-58-7-4/26

tables and 25 references, 7 of which are Soviet.

ASSOCIATION: Institut istorii yestestvoznaniya i tekhniki Akademii nauk SSSR
(Institute for the History of Natural Sciences and Technical Engineering, AS USSR)

Card 2/2

AUTHOR: Bykov, G. V.

SOV/62-58-7-5/26

TITLE: On the Distribution of π -Electron Density and Interatomic Distances (O raspredelenii π -elektronnoy plotnosti i mezhatomnykh rasstoyaniyakh) Communication 5: The π -Electron Bond Charges in Organic Compounds (Soobshcheniye 5. π -elektronnyye zaryady svyazei v organicheskikh soyedineniyakh)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye khimicheskikh nauk, 1958, Nr 7, pp 827 - 835 (USSR)

ABSTRACT: In the introduction the author mentions that the use of the equations for the calculation of the π -electron charges and of the interatomic distances suggested in the previous communication (Ref 1) has been sufficiently explained. In the present paper the author determined the lengths of the C-H bond in allene and ethylene as well as the lengths of the C-C bond in ethylene. Furthermore the π -electron bond charges of C-C in anthracene, triphenylene and ovalene were determined. Besides, a parallel calculation (according to Sherr) was carried out. The author of the present paper proved that when the nitrogen atom enters a binding with the donor atom of the π -electrons the free

Card 1/2

On the Distribution of π -Electron Density and SOV/62-58-7-5/26
Interatomic Distances. Communication 5: The π -Electron Bond Charges in Organic
Compounds

electron pair almost always passes over to the bonds (either partially or completely), by which fact the electron bond charge is increased. Finally the author discusses various hypotheses (mainly with respect to the explanation of the rules governing interatomic distances). There are 3 tables and 41 references, 10 of which are Soviet.

SUBMITTED: March 8, 1958

Card 2/2

AUTHOR: Bykov, G. V.

SOV/62-58-10-18/25

TITLE: The Interdependence Between the Electron Charges and the Length of the σ -Bonds (Zavisimost' mezhdru elektronnyimi zaryadami i dlinami σ -svyazey)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1958, Nr 10, pp 1271 - 1273 (USSR)

ABSTRACT: Based on the material accumulated in the course of the last years on the investigation of the bond length in the saturated carbon atom the author concludes the results obtained hitherto as follows: 1) It was clearly found that according to the extent of the accumulation of halogen atoms (with the exception of iodine) in one and the same carbon atom all bonds of this atom are shortened (Refs 2,3). This effect could not yet fully be explained. 2) It was found that the bonds of carbon with halogen atoms lengthen (under the influence of the coupling with the ethylene or acetylene bond). The cause of this phenomenon could not be explained as yet, except the assumption that

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The Interdependence Between the Electron Charges and
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the importance of the interatomic distance carbon - halogen is due to the influence of the nearest surroundings. A similar rule is found not only with respect to the C-X bonds (X-halogens) but also of the bonds C-C and C-H. In this case, however, not only a lengthening of the bonds takes place (as compared with standard bonds) but also their shortening (C-C in ethane, C-Cl in cyclopropyl chloride etc.) This fact has a similar explanation as that given for the interatomic distances and unsaturated compounds: The shortening of the σ -bond is the greater the greater the σ -electron charge is (or vice versa). The dependence between the bond length and the electron charges of the C-H bonds can be expressed as follows:

$$l_{CH} = 1,093 - \Delta_{CH}^{\sigma} (A_{CH}^{\sigma} - 2).$$

The phenomena of the hyperconjugation can be explained by the existence of a certain dependence between the σ -electron charges (and the properties of the C-H bonds)

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on the one hand, and the electronegative properties
of the affiliating atoms on the other hand. There are
2 tables and 31 references, 8 of which are Soviet.

ASSOCIATION: Institut istorii yestestvoznaniya i tekhniki Akademii nauk
SSSR (Institute of the History of Natural Sciences and
Engineering AS USSR)

SUBMITTED: March 8, 1958

Card 3/3

BYKOV, G.V.

History of stereochemistry in Russia. Trudy inst. ist. est. 1
tekh. 18:281-295 '58. (MIRA 11:10)
(Stereochemistry)

AUTHOR: Bykov, G. V.

79-28-3-4/61

TITLE: The Electronic Charge of the Bindings, and the Chemical Properties of Molecules (Elektronnyye zaryady svyazey i khimicheskiye svoystva molekul). I. The Activation Energy of Substitution Reactions on the Saturated Carbon Atom (I. Energii aktivatsii reaktsiy zameshcheniya u nasyshchennogo atoma ugleroda)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 3, pp. 584-588 (USSR)

ABSTRACT: Earlier the author showed (references 1-3) that the most important physical characteristics as well as the behaviour in chemical reactions of the covalent (homopolar) binding depend on its amount of electronic charge. Thus it is possible to interpret the chemical properties of complicated molecules to a great extent; this is done on the basis of adopting another structural factor, i. e. the electronic charge of the binding as well as the rules with regard to chemical properties. These rules are based on the already determined relations between electronic

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The Electronic Charge of the Bindings, and the Chemical
Properties of Molecules. I. The Activation Energy of
Substitution Reactions on the Saturated Carbon Atom

79-28-3-4/61

charges and energetic parameters of molecules and single bindings. The characteristic feature of this suggested interpretation of this problem also is its semi-quantitative character; for the determination of the qualitative rules with regard to the reactivity of the molecules not even absolute, but only relative magnitudes of the electronic charge of the binding are sufficient. It was shown earlier that the activation energy, and therefore also the velocity of reaction, of the substitution at the given binding, depends on the electronic charge. In the present paper this is also applied to the substitution reactions of the saturated carbon atom; these reactions take place according to different schemes. Therefore all this will only hold in connection with σ electronic charges of the bindings. (Details in the following explanations). All in all the activation energy of the reactions increases with regard to the electrophilic and radical substitution on the saturated carbon atom with the increase of the σ electronic charge of the binding, at which the substitution is taking place. A reverse dependence exists for the reactions of nucleophilic substitution. There are 2 figures, and 9 references, 7 of which are Soviet.

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The Electronic Charge of the Bindings, and the Chemical
Properties of Molecules. I. The Activation Energy of
Substitution Reactions on the Saturated Carbon Atom

79-28-3-4/61

ASSOCIATION: Institut istorii yestestvoznaniya i tekhniki Akademii nauk
SSSR (Institute for the History of Science and Technology, AS
USSR)

SUBMITTED: February 25, 1957.

Card 3/3

BYKOV, G.V.

Evolution of quantitative theories on the electron structure of
organic molecules. Trudy Inst.ist.est.i tekhn. 28:477-521
'59. (MIRA 13:5)

(Molecular theory) (Organic compounds)

5(4)

SOV/76-33-2-29/45

AUTHOR:

Bykov, G. V.

TITLE:

Electronegativities of Halogens and the Dipole Moments of Halogenated Methanes (Ob elektrootritsatel'nostyakh galogenov i dipol'nykh momentakh galogenmetanov)

PERIODICAL:

Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 2, pp 422 - 428 (USSR)

ABSTRACT:

In connection with a previous paper (Ref 1) the electronegativities of the halogens were calculated from data on the geometric parameters and dipole moments of halogenated methanes. The development of the conception of the nature of dipole moments is discussed (Refs 2-4), mentioning the papers of Coulson (Koulson) (Ref 5), Glazer and Reiss (Gleyzer and Reyss) (Ref 6) and including the "semi-classical" scheme of Smith (Smit) (Ref 7) et al for calculating dipole moments. As opposed to this last method the present paper presents a more precise improvement on the classical additive method which consists of finding the vector sum of the dipole moments of the individual bonds. As the standard dipole moment (μ_{CX}^0) of the bond C-X, which represents the vector

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of Halogenated Methanes

SOV/76-33-2-29/45

sum of the inductive, covalent, and atomic dipoles, the dipole moment of two σ -electron bonds C-X, as for CX_4 , is used. The following equation was derived and was found to yield satisfactory results:

$$\mu_{CX} = \mu_{CX}^0 + 2.4 l_{CX} \left(\frac{4E_X}{\sum E} - 1 \right) \quad (4) \quad (l_{CX} - \text{length of the C-X bond, } E_X - \text{electronegativity of the atom X, } \sum E - \text{sum of the electronegativities of the 4 atoms bonded to carbon}).$$

The dipole moments of 14 methyl halides were calculated using equation (4) (Table 1), and the possibility of calculating the valence angle of methyl halides (and also for more complicated molecules) is indicated. It follows from the given equations that the electronic charges in the C-H and C-F bonds must decrease in the order CH_4 , CH_3F , CH_2F_2 , CHF_3 , CF_4 . There are 1 figure, 2 tables, and 23 references, 7 of which are Soviet.

Card 2/3

Electronegativities of Halogens and the Dipole Moments
of Halogenated Methanes

SOV/76-33-2-29/45

ASSOCIATION: Akademiya nauk SSSR, Institut istorii yestestvoznaniya i
tekhniki (Academy of Sciences, USSR, Institute for the History
of Natural Science and Technology)

SUBMITTED: July 19, 1957

Card 3/3

PHASE I BOOK EXPLOITATION

SOV/4182

Bykov, Georgiy Vladimirovich

Elektronnyye zaryady svyazey v organicheskikh soyedineniyakh (Electronic Charges of Bonds in Organic Compounds). Moscow, Izd-vo AN SSSR, 1960. 177 p. Errata slip inserted. 4,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR, Otdeleniye khimicheskikh nauk.

Ed.: V.I. Kuznetsov, Candidate of Chemistry; Ed. of Publishing House: V.V. Yastrebov; Tech. Eds.: Ye. V. Makuni and Ye.V. Zelenkova.

PURPOSE: This book is intended for organic and physical chemists and physicists concerned with the mechanism and kinetics of chemical reactions.

COVERAGE: The author discusses what he calls a relatively new trend in the contemporary theory of electron structure and the reactivity of organic compounds. His work is based on the hypothesis that the electron charges of valence bonds are the true and essential characteristics governing many of the important physical properties of molecules; in which case, a portion of the σ - or π -electron cloud, concentrated at a given valence bond and, generally, not

Electronic Charges of Bonds (Cont.)

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equal to the integral number of electrons, is understood by an electron charge. The results of the author's work over the past nine years in simple and varied methods of computing, on the basis of physical data, the electron charges of bonds and on a theory of electron charges of bonds as a means of studying chemical and physical properties of organic compounds are summarized. Chapters II - VI give some results of studies of the dependence of physical and physicochemical characteristics of molecules and their structural elements on the electron charges of valence bonds; the dependence between the electron charges of bonds and chemical properties is discussed in chapters VII - X. The author thanks V.N. Kondrat'yev, M.M. Dubinin, K.T. Poroshin, and N.A. Figurovskiy. There are 16 figures and 39 tables. References, mainly Soviet, English, and German, follow each chapter.

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BYKOV, Georgiy Vladimirovich; FIGUROVSKIY, N.A., otv.red.; STERLIGOV,
O.D., red.isd-va; PULENOVA, T.P., tekhn.red.

[History of the classical theory of chemical structure] Istorija
klassicheskoi teorii khimicheskogo stroenija. Moskva, Izd-vo
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(Chemistry--History)

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Trudy Inst.ist.est.i tekhn.30:97-110 '60. (MIRA 13:8)
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[Centennial of the theory of chemical structure] Stoletie teorii
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skva, Izd-vo Akad. nauk SSSR, 1961. 146 p. (MIRA 14:12)
(Chemical structure)

BYKOV, Georgiy Vladimirovich; PETROV, A.D., otv.red.; SIMKINA, G.S.,
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[Aleksandr Mikhailovich Butlerov; an account of his life and
works] Aleksandr Mikhailovich Butlerov, ocherk zhizni i
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1.Chlen-korrespondent AN SSSR (for Petrov).
(Butlerov, Aleksandr Mikhailovich, 1828-1886)

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otv.red.; BYKOV, G.V., red.; RASKIN, N.M., red.; POLYAKOVA, T.V.,
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nost'. Sbornik dokumentov. Moskva, 1961. 416 p.

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1. Akademiya nauk SSSR.

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BYKOV, G.V.

Origination of the concept of the covalent bond in chemistry.
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BYKOV, G.V.

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BTKOV, G.V.

One hundred years of structural theory. Zhur.struktkhim.
2 no.4:395-401 JltAg '61. (MIRA 14:9)
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BYKOV, G.V.

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KAZANSKIY, B.A., akademik; REUTOV, O.A.; BYKOV, G.V., kand.khimicheskikh
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1. Akademiya nauk SSSR (for Reutov).
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1. Institut istorii yestestvoznaniya i tekhniki AN SSSR.
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1. Chlen-korrespondent AN SSSR (for Petrov).

BYKOV, G.V.

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1. Institut istorii yestestvoznaniya i tekhniki AN SSSR.

BYKOV, G.V.

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1. Institut istorii yestestvoznaniya i tekhniki AN SSSR.

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BYKOV, I.

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KHAN, B.K.; BYKOV, I.I.

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1. Institut liteynogo proizvodstva AN UkrSSR. Predstavleno akademikom
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KHAN, B.N., kand.tekhn.nauk; BYKOV, I.I., kand.tekhn.nauk

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1. Institut problem lit'ya AN UkrSSR.

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I.B., inzh.

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M.N. Tumanovskiy) Voronezhskogo meditsinskogo instituta.
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BYKOV, I. I.: Master Med Sci (diss) -- "The significance of vectorcardiography in the diagnosis of various forms of coronary insufficiency". Voronezh, 1959. 18 pp (Voronezh State Med Inst), 200 copies (KL, No 12, 1959, 131)

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(MIRA 12:10)

1. Iz kliniki fakul'tetskoy terapii Voronezhskogo meditsinskogo
instituta.

(HEART FAILURE)

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BYKOV, I.K.

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